

AMENDMENTS TO THE DRAWINGS:

An amended Fig. 1 is submitted herewith.

REMARKS

I. INTRODUCTION

The Office Action dated June 26, 2008, has been carefully considered. The following remarks are being submitted in response thereto. This paper is believed to be a complete response to the Office Action.

II. STATUS OF THE CLAIMS

Claims 1-24 were previously pending in the application. Of those claims, claims 9 and 23 have been canceled. Claims 1-8, 10-22 and 24 are pending.

III. SUMMARY OF THE OFFICE ACTION

In the Office Action, the drawings are objected to under 37 C.F.R. § 1.83(a); the specification is objected to; claims 1 and 17 are objected to; claims 1-24 are rejected under 35 U.S.C. § 112, second paragraph; claims 1-14 and 16-24 are rejected under 35 U.S.C. § 103(a) over *Klenerman et al* in view of *Vig* and *Schodowski*; and claim 15 is indicated as having allowable subject matter.

IV. THE OBJECTION TO THE DRAWINGS

The Applicant respectfully submits that the amendment to Fig. 1, the amendment to claim 12, and the cancellation of claims 9 and 23 overcome the objection to the drawings.

V. THE OBJECTION TO THE SPECIFICATION

The Applicant respectfully submits that the amendment to the abstract overcomes the objection to the specification.

VI. THE OBJECTION TO THE CLAIMS

The Applicant respectfully submits that the amendment to claims 1 and 17 overcomes the objection to those claims.

VII. THE REJECTIONS OF THE CLAIMS

A. THE REJECTION UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

The Applicant respectfully traverses the following points of the rejection of claims 1-24 under 35 U.S.C. § 112, second paragraph.

The Applicant respectfully submits that the phrase “detecting an oscillation of the transducer” would have been clear in the context of the application to a person having ordinary skill in the art who had read the claims in light of the specification. The surface referred to in the claims refers to the surface of the transducer, and therefore, when there is a disassociation event the transducer will oscillate when the surface is oscillated. The Applicant further submits that the phrase “separating an analyte from the mixture or for detecting an analyte or for determining the affinity, or a property related to the affinity between binding partners” is clear, as it would be understood by one of ordinary skill in the art that the scope of protection conferred by the claim extends to apparatus suitable for any of the listed functions and, thus a device suitable to perform just one of the listed functions would fall within the scope of the claim.

Moreover, the Applicant respectfully submits that the phrase “the transducer’s resonant frequencies” of claim 6 has inherent antecedent basis, as any transducer must have at least one resonant frequency and corresponding overtones. In addition, claim 7 is clear in the context of the description as meaning that each accent within the list could be either an analyte or a binding partner.

With regard to the remaining points, the Applicant respectfully submits that the present Amendment renders the claims clear.

B. THE REJECTION UNDER 35 U.S.C. § 103(a)

The Office Action alleges that the present claimed invention would have been obvious in view of W001/02857 (*Klenerman et al*) in combination with US5,042,288 (*Vig*) which incorporates the teaching of US4,872,765 (*Schodowski*). For the reasons set forth below, the Applicant respectfully traverses, as the applied references not only would not have rendered the present claimed invention obvious, but also include teachings which teach away from combining them as proposed in the Office Action.

Klenerman et al describes apparatus for detecting an analyte and properties relating to its affinity that utilises a transducer oscillating at a single frequency which varies the amplitude of the oscillation until a disassociation event occurs and subsequently detects the oscillations of the transducer caused by the disassociation event. A second oscillator is required as part of the detection process whereby the output of the transducer is filtered at a multiple of the fundamental resonant frequency of the transducer and then mixed with a frequency generated by a second oscillator equal to the multiple of the fundamental resonant frequency plus a difference frequency. Mixing the two signals results in a signal at the difference frequency which is used to extract the relevant information from the rupture event.

Vig discloses an apparatus that is used for sensing contamination in the atmosphere. The dual mode oscillator arrangement of *Schodowski* is used in *Vig* to compensate for shifts in the resonant frequency caused by temperature variations. In *Vig* the amplitude of the second frequency that is the multiple of the fundamental resonant frequency is entirely passive and is mixed with the fundamental resonant frequency and filtered to generate a signal that has a near linear frequency dependence upon temperature which can be used to compensate for shifts in frequency caused by temperature variations.

In contrast, the frequency information is not required in the present claimed invention. Instead, the dual mode oscillator of the present invention is arranged to detect modulation of the signal amplitude of the second oscillation frequency caused by an energy burst of a disassociation event.

Further, in a superficial similarity to *Klenerman et al*, the present invention relates to apparatus for detection of analytes and for measuring the affinity between analytes of binding partners using rupture event detection. In contrast, *Vig* relates to measurement of atmospheric contamination. Thus, *Vig* relates to a completely different technical field from the present invention. Further, there is no disclosure or suggestion in *Vig* or *Schodowski* that the disclosed apparatus could be used or would be suitable for measuring the affinity between analytes or binding partners using rupture event detection. In addition, the apparatus disclosed in *Vig* would require significant technical modification involving inventive effort in order that it could be combined with the teaching of *Klenerman* because there is no disclosure of detecting the signal amplitude around the second driving frequency in either *Vig* or *Shodowski*. For these reasons, there would be no incentive or motivation for a person of ordinary skill in the art to combine the teachings of either *Vig* or *Schodowski* with *Klenerman*. Indeed, the applied references contain strong teachings against combining them as proposed in the Office Action. The Applicant respectfully submits, therefore, that the present claimed invention would not have been obvious over the cited art.

Reconsideration and withdrawal of the rejections and objections of the claims is requested in light of the foregoing amendments and arguments.

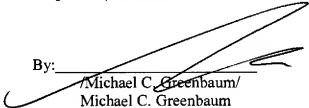
VIII. CONCLUSION

The application is believed to be in condition for allowance. A notice of allowance is respectfully requested.

Please charge any shortage of fees or credit any overpayment thereof to BLANK ROME LLP, Deposit Account No. 23-2185 (124262-00102). It is respectfully submitted that no Petition for Extension of Time is required to accompany the present submission. However, in the event that a separate Petition for an Extension of Time is required to render this submission timely and either does not accompany this submission or is insufficient to render this submission timely, the Applicant herewith petitions under 37 C.F.R. § 1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized above.

Respectfully submitted,

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